

Permitting Decisions- Variation

We have decided to grant the variation for Docklands Technical Centre operated by Telehouse International Corporation of Europe Limited.

The variation number is EPR/EP3507SL/V002

The permit was issued on 19/12/2024

The variation is for:

- Consolidation of the currently separately permitted Docklands data centre (EP reference EPR/SP3237JU), with Docklands Technical Centre (EPR/EP3507SL). They are referred to respectively as Telehouse North (TN) and Telehouse South (TS) in this document.
- At TS, removal of gas boilers. Replacement of all 10 horizontal stack standby diesel generators with new generators. The new generators will have vertical stacks and will be fitted with selective catalytic reduction (SCR) abatement for oxides of nitrogen. Original proposal was to install 10 new engines but due to air quality concerns this was later changed to 4.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document provides a record of the decision-making process, it:

- highlights [key issues](#) in the determination
- summarises the decision making process in the [decision considerations](#) section to show how the main relevant factors have been taken into account
- shows how we have considered the [consultation responses](#)

Unless the decision document specifies otherwise, we have accepted the applicant's proposals.

Read the permitting decisions in conjunction with the environmental permit and the variation notice.

Key issues of the decision

1. Testing regime

1.1 Telehouse North (TN)

Annual planned testing regime for standby generators (SBG) in building N2 has been reduced from 60 hours to 53 hours per year. Building N2 includes two new SBGs that were permitted in 2019 but not previously installed. Details of the testing regime is shown in the table below:

Operational Requirement	North Building	East Building	North 2 Building	West Building
3-monthly off-load testing during maintenance (1 hour per test / 3 months)	4	4	4	4
Annual UPS wrap around maintenance (4 hours per test / 3 months, except West building (10 hours per test))	15	15	39	18
Six times per year part load tests (2 or 4 hours per test per SBG)	18	18	2	18
Black Building Tests (4 hours per test twice per year) where SBGs are started, synchronised and take the associated building load	8	8	8	8
Total Annual Operational Hours Per SBG	45	45	53	48

1.2 Telehouse South (TS)

The operator modelled the impact of the maintenance and testing regime for the replacement SBGs at the TS data centre. When we audited the air dispersion modelling, we found a possible exceedance at receptor HR37 of the NO₂ AEGL-1 and the 1 hour NO EAL. The table below shows the changes that the operator made to the testing regime. The operator also changed their proposal so that only 4 new engines were proposed:

SBG Test	Test detail	Planned Test Schedule Annual Operational Hours Per SBG (as Stated in 2023 EP Variation Application)	Revised Planned Test Schedule Annual Operational Hours Per SBG
Quarterly maintenance (100% load)	Quarterly testing will be undertaken on each SBG. The SBGs will undergo a full load test. Testing will be for 10 SBGs running simultaneously for 6 hours. Operation of the SBGs for quarterly testing will be undertaken outside of working hours typically on a Saturday or Sunday.	24 hours	N/A
Quarterly maintenance (off load)	Testing for each SBG will be for 15 minutes per quarter . The 4 SBGs will be run simultaneously.	N/A	1 (SBG's are tested individually with no more than 1 start-up in any 1-hour) Testing may take place between 10am and 6pm, 7 days/week.
Part load test	Testing for each SBG will be for 1 hour per month . Part load testing will not be undertaken during those 4 months when a quarterly off load test is undertaken – so will only occur during 8 months of the year. The 4 SBGs will be run simultaneously (worst case).	N/A	8 (Number SBGs tested simultaneously will depend upon building load – for the purposes of assessment all 4 SBGs tested simultaneously has been assumed) Testing may take place between 10am and 6pm, 7 days/week.
Black-building (quarterly)	Testing for each SBG will be for 4 hours per quarter . The 4 SBGs will be run simultaneously.	N/A	16
Total hours per SBG		36	25

1.3 Summary

Testing for each SBG in TS will be significantly below the 50-hours as stated in the EA Data centre FAQ. Telehouse will endeavour for the TS SBGs not to be tested concurrently with the TN SBGs. The operator stated that it is possible that it will happen on occasion. However, our audit found that to avoid daily ES exceedances at ecological sites some restrictions were required. The following was agreed with the operator and specified in table S1.1 of the permit. There are two north buildings, North and North 2. Reference to North building refers to the 1st of the two:

- Testing shall not be carried out for longer than 4 hours per building for the northern campus (TN) and 8 hours for the southern campus building (TS), in any 24-hour period.

- Testing shall not be carried out at more than two northern campus (TN) buildings, within any 24-hour period in which the southern campus building (TS) is also tested.
- Testing shall not be carried out at both the North and West buildings within the same 24-hour period

2. Air quality

The operator carried out dispersion modelling using AERMOD v11.0. Impacts at sensitive human and ecological receptors were quantified for two scenarios:

- Routine Maintenance and testing
- Emergency Outage Operations – the unpredictable emergency grid outage any time during the year requiring the maximum plant to operate for the required outage duration.

2.1 Outage time period

Modelling was based on a 26 hour outage, the operator justified this as follows. The outage period was based upon the previous Schedule 5 questions, CAR forms, and Air Quality Action Plans (AQAP) that were revised at the request from the Environment Agency since the last application in response to nearby developments and new exposure locations (specifically the Travel Lodge and Orchard Wharf). The Environment Agency requested that the number of hours was calculated below which would not lead to a greater than 5% probability of exceedance of an ES to inform the AQAP. This was carried through to this risk assessment and applied in the site wide outage scenario, now including Telehouse South, for consistency with the previous work.

2.2 Pollutants considered

The operator modelled emissions of NO_x. SCR abatement is proposed for the new generators. Modelling of ammonia due to ammonia slip was not required because:

- Emissions will be < 10 mg/m³
- The human health ES for ammonia are much higher than the NO_x ES at 2,500 µg/m³ hourly mean and 180 µg/m³ annual mean.
- The ammonia ES for ecological sites is an annual average and so any short term emissions of ammonia would have a negligible impact on any ecological sites.

The SCR abatement will have a 10 minute warm up period. Higher NO_x emission during the warm up period was included in the operators impact assessment.

2.3 Human receptors

The operator modelled both maintenance testing and also an emergency outage operation. We audited the operators modelling. Whilst our absolute numerical predictions do not entirely agree with the applicant's predictions, considering expected modelling uncertainties, we are satisfied that the applicant's numerical predictions at human health receptors are a reasonable worst-case, and we agree with their conclusions regarding human health.

2.3.1 Testing for TS

The operator modelled the impact of the maintenance and testing regime for 10 replacement SBGs at the TS data centre. When we audited the air dispersion modelling we found a possible exceedance at receptor HR37 of the NO₂ AEGL-1 and the 1 hour NO EAL. We asked the operator to consider an amended testing regime which they did but also changed their proposal to only install 4 new engines rather than the original 10. The operator had requested that the additional 6 could be added through a pre-operational condition. We did not agree to this. Due to us needing to re-assess any revised dispersion modelling to ensure no exceedances, our view is that a further variation application would be required to add the other 6 engines. Our findings from our audit of the amended modelling are summarised below:

- Exceedances of the ST NO₂ ES at sensitive human health receptor locations are high unlikely (below 1%) using statistical methods (hypergeometric distribution).
- Maximum PCs against the 10-minute and 1-hour AEGL-1 and 1-hour NO EAL are not insignificant (>10%). PECs are unlikely to exceed AEGL-1 or the EAL. To calculate 10-minute averaged PCs, we have used the 1-hour to 15-minute conversion factor of 1.34 from our guidance¹. For NO, we have assumed that 90% of NO_x is NO.
- Maximum predicted annual NO₂ PC is 'not insignificant' (>1%) at the maximally impacted receptor. The PEC is unlikely to exceed the ES.
- Maximum predicted annual NO PC is insignificant (<1%) at the maximally impacted receptor.

2.3.2 Testing for TN

We cannot rule out exceedance of the 1-hour NO₂ ES, 10-minute and 1-hour NO₂ AEGL-1 and the 1-hour NO ES, should testing operations coincide with the worst-case meteorological conditions.

Operation of the engines and testing at TN is not changing through this variation. Testing hours have reduced at TN since issue of the permit. However, since the original permit was issued, a hotel has been built very close to the site and we now assess against the NO₂ AEGL-1 and 1 hour NO standards. As stated above our audit showed a risk of these standards being exceeded at the nearby hotel during testing of the TN engines.

The purpose of this variation is replacing engines at TS with new engines that meet BAT emission standards. They will also be fitted with SCR abatement which is going beyond BAT. The engines at TN are not changing through this variation and although not subject to this variation we have set an improvement condition TN IC4 as an Environment Agency initiated variation to require the operator to review measures to reduce short term impacts from testing at TN.

2.3.3 Emergency operation

The operator stated that grid reliability is very good as there have been no outages since they took ownership of the site in 2020. In the original application in 2017 it was stated that there have been no outages since 2002. We agree that the likelihood of emergency operations taking place is considered low as grid outages are unlikely based on historic data.

2.4 Ecological receptors

The following European habitat sites are within 10 km of the installation:

- Epping Forest SAC
- Lee Valley SPA
- Lee Valley Ramsar

The tables below showed the modelled impacts at these sites.

Pollutant	Epping Forest (SAC)		Lee Valley (SPA and Ramsar)	
	CL / CLo	PC % of CL or CLo	CL / CLo	PC % of CL or CLo
Acidification	1.6 keq/ha/yr	0.1%	5.1 keq/ha/yr	0.1%
Nitrogen deposition	5 kgN/ha/yr	0.2%	15 kgN/ha/yr	0.01%
NOx	30 µg/m ³ annual mean	0.1%	30 µg/m ³ annual mean	0.1%
	200 µg/m ³ daily mean	<10 %	200 µg/m ³ hourly mean	<10%

The table above shows that impacts are insignificant with long term PC<1% and short term <10%.

We are satisfied that there will be no likely significant effect.

There are no SSSIs within 2km.

There are several local nature reserves and local wildlife sites within 2km. Process contributions were below the critical levels and critical loads for the routine testing and maintenance scenario. Exceedances during an outage are unlikely do to grid reliability

3. Noise

The Applicant provided noise impact assessment. The assessment considered the changes to TS and cumulative impacts with TN. The assessment used BS4142 to assess the likelihood of noise impacts at nearby receptors. We audited the assessment and agree that there is likely to be a low impact from standby generator testing and emergency scenarios.

4. Operating hours

The new SBGs (Medium Combustion Plant (MCP)) will be operated on limited hours, with permit tables S1.1 and S1.2 securing the necessary requirements.

New MCPs operating less than 500 hours per year are exempt from meeting Medium Combustion Plant Directive (MCPD) emission limits, refer to Emission limits section of this document.

5. Best Available Technique (BAT)

We accept that oil fired diesel generators are presently a commonly used technology for standby generators in data centres.

The Data Centre FAQ specifies the BAT emissions specification for new diesel-fired reciprocating engines as 2g TA-Luft or EPA Tier 2 with guaranteed emissions compliant (or equivalent standard). The replaced SBGs at the TS data centre will be Tier 2 (optimised emissions) compliant. They will also have abatement which will reduce NOx emissions by 90% to < 236 mg/m³, well below the 2,000 mg/m³ standard.

The default generator specification as a minimum for new plant, to minimise the impacts of emissions to air (NOx), is 2g TA-Luft (or equivalent standard) or an equivalent NOx emission concentration of 2000 mg/m³. The generators on the

site meet this standard. We agree with the operator that the engines are BAT for the proposed operation.

6. Fuel storage and delivery

The existing 2 fuel storage tanks will be removed. The 4 new containerised SBGs will each have individual belly tanks. Each tank will have 18,000 litre diesel storage capacity. The belly tanks will automatically supply diesel to the SBG. The belly tanks will be bunded (110% capacity) and will be designed to British Standard BS799 Part 5 2010 (Oil Burning Equipment. Carbon steel oil storage tanks. Specification).

The tanks will have the following measures:

- Bund 110% capacity.
- Tank level gauge
- High and low level alarms
- A pressure delivery over-fill prevention valve
- Leak detection alarms
- Pressure relief valves to prevent over pressurisation of diesel supplied from the belly tanks.
- Pipework will be painted or constructed of corrosion resistant material

The belly tanks will be filled directly from refuelling vehicles by a Telehouse appointed fuel supplier and in accordance with fuel delivery procedures in the EMS. Fuel will be delivered directly to the belly tanks via the new diesel fill point located at ground level in a dedicated tanker refuelling area.

Tertiary containment will be provided by the roof level of the SBG where the generators will be located, and by the contoured hardstanding of the area where the road tanker refuelling area and refuelling point will be located, additionally raised kerbing will be present along the site perimeter. These tertiary containment measures (along with the capacity of the oil interceptor and surface water drainage) will be designed to provide containment of a single chamber of a fuel delivery tanker (7,600 litres). Any unplanned release of diesel would be prevented from percolating into the ground by the hardstanding; should such a release enter the local on-site surface water drainage system it would be captured by the alarmed interceptor (Class 1 forecourt petrol interceptor designed with a holding capacity of 7,600 litres) which will have an automatic shut off device that will activate on detection of diesel in the interceptor (this alarm will be connected to the building management system. In such an event, spillage procedures would be implemented.

7. Emission limits

Based on the operational requirements, we have not set any emission limits.

As there are no limits, permit condition 2.3.5 'The activities shall not operate for more than 500 hours per year' has been included to restrict the hours of operation. The operator will be required to record operating hours and the number of runs for each of the generators.

8. Monitoring requirements

8.1 Telehouse South

We have specified monitoring of emissions of carbon monoxide from the emission points from the new SBGs (defined as new MCPs). The monitoring frequency is once within four months of the issue date of this variation or the date when the generators are first put into operation, whichever is later, then every 1,500 hours of operation or every five years (whichever comes first). This monitoring has been included in the permit to comply with the requirements of the MCPD, which specifies the minimum requirements for monitoring of carbon monoxide emissions, regardless of the reduced operating hours of the plant.

We have also specified monitoring of emissions of NO_x with the same frequency specified for the monitoring of carbon monoxide emissions. In setting out this requirement, we have applied our regulatory discretion, as we consider that this limited monitoring, to happen in concurrence with the carbon monoxide monitoring, is proportionate to the risk associated with the emissions of NO_x from the installation.

8.2 Telehouse North

The permit is for 27 SBGs, 19 of these are classed as existing MCPs. The other 8 are classed new MCPs with 5 of the 8 already installed.

We have specified the same monitoring requirement as for the new MCPs listed above. However, in line with MCPD the monitoring will commence from 2030 for MCP 5 MW or less and from 2025 for MCP > 5 MW.

Taking into account the limited hours of operation of the generators operating at the installation, and the fact that we are not setting emission limits for carbon monoxide and NO_x, we consider this monitoring can be carried out in line with web guide 'Monitoring stack emissions: low risk MCPs and specified generators' Published 20 March 2024 (formerly known as TGN M5).

The operator did not specify any monitoring requirements in their application. We have set an improvement condition requesting the operator to submit a monitoring plan.

Decision considerations

Confidential information

A claim for commercial or industrial confidentiality has not been made.

The decision was taken in accordance with our guidance on confidentiality.

Identifying confidential information

We have not identified information provided as part of the application that we consider to be confidential.

The decision was taken in accordance with our guidance on confidentiality.

Consultation

The consultation requirements were identified in accordance with the Environmental Permitting (England and Wales) Regulations (2016) and our public participation statement.

The application was publicised on the GOV.UK website.

We consulted the following organisations:

- Local Authority (Tower Hamlets) – Environmental Protection Department
- Local Authority (Newham London Borough) – Environmental Protection Department
- Local Authority (Greenwich London Borough – Environmental Protection Department
- Health and Safety Executive
- National Grid
- Civil Aviation Authority
- London City Airport
- National Air Traffic Services

The comments and our responses are summarised in the [consultation responses](#) section.

The regulated facility

We considered the extent and nature of the facility/facilities at the site in accordance with RGN2 'Understanding the meaning of regulated facility',

Appendix 2 of RGN2 'Defining the scope of the installation and our data centre FAQ.

We have combined permits EPR/EP3507SL and EPR/SP3237JU into a single permit as a single installation. The operator set out the reasons for considering it a single installation in section 4.4 of their best available techniques and operating techniques document. We agree with the operator's reasons.

The site

The operator has provided plans which we consider to be satisfactory. These show the extent of the site of the facility including the discharge points. The plans are included in the permit.

Nature conservation, landscape, heritage and protected species and habitat designations

We have checked the location of the application to assess if it is within the screening distances we consider relevant for impacts on nature conservation, landscape, heritage and protected species and habitat designations. The application is within our screening distances for these designations.

We have assessed the application and its potential to affect sites of nature conservation, landscape, heritage and protected species and habitat designations identified in the nature conservation screening report as part of the permitting process.

We consider that the application will not affect any site of nature conservation, landscape and heritage, and/or protected species or habitats identified.

We have consulted Natural England on our Habitats Regulation assessment, and taken their comments into account in the permitting decision. Natural England agreed with our conclusion of no likely significant effect.

The decision was taken in accordance with our guidance.

Environmental risk

We have reviewed the operator's assessment of the environmental risk from the facility.

The operator's risk assessment is satisfactory.

General operating techniques

We have reviewed the techniques used by the operator and compared these with the relevant guidance notes and we consider them to represent appropriate techniques for the facility.

The operating techniques that the applicant must use are specified in table S1.2 in the environmental permit.

Operating techniques for emissions that do not screen out as insignificant

Emissions of oxides of nitrogen cannot be screened out as insignificant. We have assessed whether the proposed techniques are Best Available Techniques (BAT).

The proposed techniques/ emission levels for emissions that do not screen out as insignificant are in line with the techniques and benchmark levels contained in the technical guidance and we consider them to represent appropriate techniques for the facility. The permit conditions enable compliance with relevant BAT reference documents (BREFs).

Updating permit conditions during consolidation

We have updated permit conditions to those in the current generic permit template as part of permit consolidation. The conditions will provide the same level of protection as those in the previous permits.

Changes to the permit conditions due to an Environment Agency initiated variation

We have updated permit conditions for existing MCP so the permit implements the requirements of the medium combustion plant directive.

Pre-operational conditions

Based on the information in the application, we consider that we need to include pre-operational conditions.

We have retained pre-operational condition PO1 from permit EPR/SP3237JU. The permit authorised operation of 27 generators and at the time of permit issue 8 of those 27 were yet to be installed. There are now 3 left to install so PO1 had been kept for those 3.

We have added PO2, for the operator to submit a commissioning plan for the new diesel generators.

Improvement programme

Based on the information on the application, we consider that we need to include an improvement programme.

Completed improvement conditions from both permits have been marked as such in the consolidated permit. We have added improvement condition IC5 for the operator to submit a monitoring plan to us for approval. IC6 was added for the operator to consolidate their two air quality actions plans into a single plan that covers the entire installation (Telehouse North and South).

We also set TN IC4 as described in section 2.3.2 and TS IC3 to ensure that the SCR abatement is optimised.

Monitoring

We have decided that monitoring should be added in line with MCPD requirements. See key issues section for further details.

Reporting

We have added reporting in the permit for reporting of the above monitoring data.

Management system

We are not aware of any reason to consider that the operator will not have the management system to enable it to comply with the permit conditions.

The decision was taken in accordance with the guidance on operator competence and how to develop a management system for environmental permits.

Growth duty

We have considered our duty to have regard to the desirability of promoting economic growth set out in section 108(1) of the Deregulation Act 2015 and the guidance issued under section 110 of that Act in deciding whether to grant this permit variation.

Paragraph 1.3 of the guidance says:

“The primary role of regulators, in delivering regulation, is to achieve the regulatory outcomes for which they are responsible. For a number of regulators, these regulatory outcomes include an explicit reference to development or growth. The growth duty establishes economic growth as a factor that all

specified regulators should have regard to, alongside the delivery of the protections set out in the relevant legislation.”

We have addressed the legislative requirements and environmental standards to be set for this operation in the body of the decision document above. The guidance is clear at paragraph 1.5 that the growth duty does not legitimise non-compliance and its purpose is not to achieve or pursue economic growth at the expense of necessary protections.

We consider the requirements and standards we have set in this permit are reasonable and necessary to avoid a risk of an unacceptable level of pollution. This also promotes growth amongst legitimate operators because the standards applied to the operator are consistent across businesses in this sector and have been set to achieve the required legislative standards.

Consultation Responses

The following summarises the responses to consultation with other organisations and our notice on GOV.UK for the public, and the way in which we have considered these in the determination process.

Responses received

Response received from: Cadent Gas Limited.

Brief summary of issues raised: Informed us that they were responding to the planning application and assessing location of their gas assets.

Summary of actions taken: We wrote back informing Cadent that this was not a planning application. Cadent later replied to say no objection to the application.